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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,693	02/06/2002	Yutaka Nakazawa	8013-1005	5640
466	7590	08/05/2004	EXAMINER	
YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			NGUYEN, DANNY	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 08/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/066,693

Applicant(s)

NAKAZAWA ET AL.

Examiner

Danny Nguyen

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Am

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7,9-12,14,15,17 and 24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7,9-12,14,15 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments see Remark filed 07/08/2004, with respect to claims 1, 6, 11 have been fully considered and are persuasive. The final rejections of claims 1,2, 4-7,9-12,14,15,17 have been withdrawn.
2. Claims 3, 8, 13, 16, and 18-20 are cancelled.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ivanov et al (USPN 5,557,497) in view of Mrotek et al (USPN 5,776,633).

Regarding claim 1, Ivanov discloses an electric double layer capacitor (see fig. 1-4) having electrodes (such as 11), which include activated carbon particles (19) and a binder (22) binding the activated carbon particles (e.g. col. 4, lines 55-58), and an electrolytic solution (e.g. col. 3, lines 35). Ivanov does not disclose the activated carbon particles have an average diameter and a particle size as claimed. Mrotek discloses a double layer capacitor structure comprises the activated carbon particles have an average diameter from 5 to 20 micrometers and a particle size of from 0.5 to 300

micrometers (col. 3, lines 30-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected to the activated carbon particles having an average diameter from 5 to 20 micrometers and a particle size of from 0.5 to 300 micrometers as disclosed by Mrotek to incorporate the average diameter and the size of activated carbon particles within 5-13 micrometers and 2-20 micrometers in order to provide a high mechanical strength and low resistivity (e.g. col. 1, lines 14-16).

Regarding claims 4, 5, Ivanov discloses the binder that contains materials such as fluoro-polymer and polyvinylidene fluoride (col. 4, lines 56-62).

4. Claims 6, 11, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fong et al (USPN 5,069,683) in view of Mrotek et al. Fong discloses an electric double layer capacitor (see fig. 1) comprises a separator (50), a pair of electrodes (20, 40) separated by the separator, the electrodes including activated carbon particles (such as 70) and a binder binding the particles (e.g. see col. 13, lines 24-45), a pair of collectors (45 and 85) separated by the electrodes, wherein a density of electrodes (20, 40) is in range of 0.2 g/cm³ to 2.0 g/cm³ (see col. 12, lines 64-68). Fong does not disclose the activated carbon particles have an average diameter and a particle size as claimed. Mrotek discloses a double layer capacitor structure comprises the activated carbon particles have an average diameter from 5 to 20 micrometers and a particle size of from 0.5 to 300 micrometers (col. 3, lines 30-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected to the activated carbon particles having an average diameter from 5 to 20 micrometers and a

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particle size of from 0.5 to 300 micrometers as disclosed by Mrotek to incorporate the average diameter and the size of activated carbon particles within 5-13 micrometers and 2-20 micrometers in order to provide a high mechanical strength and low resistivity (e.g. col. 1, lines 14-16).

5. Claim 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ivanov in view of Mrotek and Andelman (USPN 6,127,474). Ivanov and Mrotek do not disclose the electrodes have the specific resistance as claimed. However, providing a capacitor with an electrode resistance of 1-10 ohm cm is well known in the art. Selecting the exact valued of the electrode resistance is based upon the design constraints imposed by the system in which the capacitor id designed to be used in. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the specific resistance of electrodes of Ivanov and Mrotek to incorporate the specific resistance within 2-7 ohm cm based upon such design constraints because this is a known range of electrode resistance as taught by Andelman (col. 7, lines 21-23).

6. Claims 7, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fong in view of Mrotek and Andelman (USPN 6,127,474). The combination of Fong and Mrotek do not disclose the electrodes have the specific resistance as claimed. However, providing a capacitor with an electrode resistance of 1-10 ohm cm is well known in the art. Selecting the exact valued of the electrode resistance is based upon the design constraints imposed by the system in which the capacitor id designed to be used in. It

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would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the specific resistance of electrodes of Fong and Mrotek to incorporate the specific resistance within 2-7 ohm cm based upon such design constraints because this is a known range of electrode resistance as taught by Andelman (col. 7, lines 21-23).

7. Claims 9, 10, 14, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fong in view of Mrotek and Ivanov. The combination of Fong and Mrotek disclose a binder for binding the activated carbon particles, but do not disclose the binder as claimed. Ivanov discloses a double layer capacitor circuit comprises a binder that contains materials such as fluoro-polymer and polyvinylidene fluoride (e.g. see col. 4, lines 56-62). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the binder Fong and Mrotek to incorporate the binder that contains materials such as fluoro-polymer and polyvinylidene fluoride as taught by Ivanov because they have a good adhesion to the activated carbon (col. 4, lines 60-62).

Conclusion


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Danny Nguyen whose telephone number is (571)-272-2054. The examiner can normally be reached on Mon to Fri 8:00 AM to 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)-272-2058. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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2/8/2004



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